

Homework #8
CS322 / KAIST 2011 Fall
Choe, Kwang-Moo
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Exercise 1. (10pt) Let $\#_a(s)$ denote the number of occurrences of symbol a in a string s . Let $L = \{x \in \Sigma^* \mid \#_a(x) = \#_b(x)\}$. Consider the following CFG.

$$S \rightarrow aSbS \mid bSaS \mid \epsilon$$

Describe the strings $aabababb$ in right parser with parse tree.

Exercise 2. (10pt) Construct a Turing Machine which accepts the **multiplication** (using the subroutine)

input : $0^m 10^n 1$
output : 0^{mn}